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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,616	03/15/2004	Chih-Cheng Chen	MTKP0108USA	2615

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EXAMINER	
HUANG, DAVID S	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
06/28/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/708,616	CHEN ET AL.	
	Examiner	Art Unit	
	David Huang	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 26* is/are rejected.

7)☒ Claim(s) *2-25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. **Claims 5, 6, 8, 17, and 18** are objected to because of the following informalities:

Regarding **claims 5, 6, and 8**, the claim language "modifying their duty cycles" is confusing and should be revised to better explain that the pulse extension device receives only one signal at a time (claim 5, line 3 and claim 6, lines 4-5). It is suggested to applicant to revise the claims to read as "modifying the duty cycle of the received signal."

Regarding **claims 17 and 18**, the claim language "to modify its duty cycle" is confusing and should be revised to better explain that the pulse extension device (claim 17) and the pulse extender (claim 18) modify the duty cycle of the received signal. It is suggested to applicant to revise the claims to read as "to modify the duty cycle of the received signal."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwag et al. (US Patent Application Publication 2004/0042368) in view of Ang (US Patent 6,424,630), and further in view of Hung et al. (US Patent Application Publication 2004/0141450).

Regarding **claim 1**, Kwag et al. discloses a data slicer comprising:

a comparator coupled with an input signal and a reference signal for generating a sliced signal (comparator 510, Figure 6);

a pulse extension device coupled to the comparator and the waveform generator for modifying the duty cycle of either the sliced signal or the calibration signal to output (duty detector 530, Figure 6; page 3, [0042]);

a charge pump (560, Figure 6) coupled between the pulse extension device and a first node (N1, Figure 6) for charging and discharging the first node according to a signal output from the pulse extension device (Figure 6, page 4, [0063]-[0064]); and

a feedback device coupled between the first node and the comparator for generating the reference signal (LPF 540, page 3, [0044], Figure 6).

However, Kwag et al. fail to expressly disclose a waveform generator for generating a calibration signal and a determining circuit for adjusting the data slicer according to the level change at the first node.

Ang teaches a common mode signal generator 76 configured for selectively generating a common mode voltage signal (CM) in response to a common mode selection signal TAP(7:0) output by calibration control circuit 70 (column 7, lines 44-47; Figure 4).

However neither Kwag et al. nor Ang teaches a determining circuit for adjusting the data slicer according to the level change at the first node.

Hung et al. discloses DSV (digital sum value) counter 54 and microprocessor 56 (Figure 6), used to control the adjusting process of current pumps 58 and 60 according to the DSV calculated by the DSV counter (page 3, [0023]; Figure 6). Hung et al. also teach because there is a mismatch between the current pumps 34 and 36, the actual reference level V_r, is deviated from an ideal value so that the DSV of the reproduced digital data runs out of a reasonable tolerance window (page 2, [0009]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Kwag et al. with the calibration circuit of Ang since the calibration control circuit 70 determines an optimum calibrated value which can then be used as an ideal offset value that compensates for any process variations (Ang, column 8, lines 27-33). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combined teaching of Kwag et al. and Ang with the teaching of Hung et al. since it enables the slicer to adjust the output current of the current pumps to reduce the difference between a first and second offset value thereby maintaining the slicer reference level within a predetermined tolerance window and improves data reproduction accuracy (Hung et al., page 2, [0013]).

Regarding **claim 26**, the combination of Kwag et al., Ang, and Hung et al. discloses everything claimed as applied above in claim 1, and further disclose in Kwag wherein the feedback device is a low pass filter (540, Figure 6).

Allowable Subject Matter

5. **Claims 2-25** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and addressing all the objections above.

Citation of Pertinent Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Anderson (US Patent 6,349,121) discloses a baseband data slicer that is both AC and DC coupled and compensates for drifts in the slicer threshold due to filter settling times (column 3 lines 8-67).

Tsujikawa (US Patent Application Publication 2002/0070765) discloses a data slicer circuit.

Yamanoi et al. (US Patent 6,631,103) disclose a duty feedback slicer that compensates for asymmetry in the duty of cycle of an output signal (column 4, lines 36-67).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Huang whose telephone number is (571) 270-1798. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSH/dsh

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER